

REMARKS

Claims 1-10 were examined and reported in the Office Action. Claims 1-10 are rejected. Claim 1 has been amended. Claims 1-10 remain.

Applicant requests reconsideration of the application in view of the following remarks.

I. 35 U.S.C. §102(e)

It is asserted in the Office Action dated March 23, 2005, and maintained in the Advisory Action, that claims 1-4, 6, 8, and 9 are rejected under 35 U.S.C. §102(e), as being anticipated by U. S. Patent No. 6,049,614 issued to Kim ("Kim"). Applicant respectfully traverses the aforementioned rejection for the following reasons.

According to MPEP §2131,

'[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' (Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). 'The identical invention must be shown in as complete detail as is contained in the ... claim.' (Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). The elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, *i.e.*, identity of terminology is not required. (In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)).

Applicant's claim 1 contains the limitations of

[a] sender device for sending an encrypted information signal, the device comprising: means for generating chaotic signals comprising a source producing a chaotic signal and provided with a feedback loop comprising means for generating time delay, and a non-linear circuit element, means for producing the encrypted information signal comprising a mixer circuit element to inject an information signal to encrypt the information signal, received on one input, into the chaotic signal propagating in the feedback loop, received on another input, wherein the feedback loop includes means for filter-forming to limit the spectrum of the chaotic signal to one or more spectrum bands to allow the

sender to directly transmit the chaotic signal obtained from the feed back loop, and the encrypted information signal enables a receiver device to be automatically self-synchronized.

Applicant's claimed invention proposes an approach of synchronization specific to delay non-linear dynamical systems. Applicant's claimed invention includes a chaos signal generator based on a voltage controlled oscillator operating with a delayed non-linear feedback circuit including a delay line element. Therefore, the chaotic signal is obtained as a function of time is governed by time delay non-linear differential equations. And the means for filter forming are integrated in the feedback loop. This allows a sender unit to directly transmit the chaotic signal obtained from the feedback loop. Therefore, the generated signal does not need to be filtered outside of the feedback loop. (See Applicant's specification, page 11 lines 7-10 and page 14 lines 33-37).

Kim discloses a chaotic system based on a classical chaotic dynamical system governed by ordinary differential equations (ODE) and does not disclose, teach or suggest "means for generating time delay." Further, Kim discloses filtering of a noise signal that is already provided. In contrast, the filtering disclosed in Applicant's claimed invention is inherently integrated in the delay system generating the chaotic signal. Thus, the generated chaotic signal is not filtered any more outside of the feedback loop. In other words, it is the internal filter of the delay chaos generator that partly defines the spectrum of the generated chaotic signal.

Moreover, Kim does not teach, disclose or suggest "the feedback loop includes means for filter-forming to limit the spectrum of the chaotic signal to one or more spectrum bands to allow the sender to directly transmit the chaotic signal obtained from the feed back loop, and the encrypted information signal enables a receiver device to be automatically self-synchronized."

Therefore, since Kim does not disclose, teach or suggest all of Applicant's amended claim 1 limitations, Applicant respectfully asserts that a *prima facie* rejection under 35 U.S.C. § 102(e) has not been adequately set forth relative to Kim. Thus, Applicant's amended claim 1 is not anticipated by Kim. Additionally, the claims that

directly or indirectly depend on claim 1, namely claims 2-4, 6, 8 and 9, are also not anticipated by Kim for the same reason.

Accordingly, withdrawal of the 35 U.S.C. §102(e) rejections for claims 1-4, 6, 8, and 9 are respectfully requested.

II. 35 U.S.C. § 103(a)

A. It is asserted in the Office Action dated March 23, 2005, and maintained in the Advisory Action, that claim 10 is rejected under 35 U.S.C. § 103(a), as being unpatentable over Kim, in view of U. S. Patent No. 5,729,607 issued to DeFries ("DeFries"). Applicant respectfully traverses the aforementioned rejection for the following reasons.

According to MPEP §2142

[t]o establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. (In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

Further, according to MPEP §2143.03, "[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." "*All words in a claim must be considered* in judging the patentability of that claim against the prior art." (In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970), emphasis added.)

Applicant's claim 10 depends on amended claim 1. Applicant has addressed claim 1 regarding Kim above in section I.

DeFries discloses a communication system that uses the noise signal that naturally occurs in transmission conduits between a transmitter and a receiver to encode an information signal. DeFries further discloses identifying and using the existing noise sustained structure for transmission coding negates the necessity to filter or change the spectral density profile of the information signal (DeFries, column 15, lines 63-67). DeFries, however, does not teach, disclose or suggest “the feedback loop includes means for filter-forming to limit the spectrum of the chaotic signal to one or more spectrum bands to allow the sender to directly transmit the chaotic signal obtained from the feed back loop, and the encrypted information signal enables a receiver device to be automatically self-synchronized.”

Therefore, even if Kim were combined with DeFries, the resulting invention would still not include all of Applicant’s claimed limitations. Since neither Kim, DeFries, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant’s amended claim 1, Applicant’s amended claim 1 is not obvious over Kim in view of DeFries since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claim that directly depends on amended claim 1, namely claim 10, is also not obvious over Kim in view of DeFries for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejections for claim 10 is respectfully requested.

B. It is asserted in the Office Action that claims 5 and 7 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over Kim, in view of U. S. Patent No. 5,379,346 issued to Pecora (“Pecora”). Applicant respectfully traverses the aforementioned rejection for the following reasons.

Applicant’s claims 5 and 7 depend on amended claim 1. Applicant has addressed amended claim 1 regarding Kim above in section I.

Pecora discloses a communication system comprising synchronizable chaotic systems using cascaded transmitters and receivers. Pecora further discloses a system with two transmission carriers between a transmitter and receiver. Additionally, it is an object of Pecora to provide an improved device that relies on wide frequency band synchronized signal. Pecora, however, does not teach, disclose or suggest “the feedback

loop includes means for filter-forming to limit the spectrum of the chaotic signal to one or more spectrum bands to allow the sender to directly transmit the chaotic signal obtained from the feed back loop, and the encrypted information signal enables a receiver device to be automatically self-synchronized."

Therefore, even if Kim were combined with Pecora the resulting invention would still not teach, disclose or suggest all of Applicant's amended claim 1 limitations. Since neither Kim, Pecora, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant's amended claim 1, Applicant's amended claim 1 is not obvious over Kim in view of Pecora since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claim that directly depends on amended claim 1, namely claims 5 and 7, are also not obvious over Kim in view of Pecora for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejections for claims 5 and 7 are respectfully requested.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely 1-10, patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

PETITION FOR EXTENSION OF TIME

Per 37 C.F.R. 1.136(a) and in connection with the Advisory Action mailed on July 6, 2005, Applicant respectfully petitions the Commissioner for a two (2) month extension of time, extending the period for response to August 23, 2005. The Commissioner is hereby authorized to charge payment to Deposit Account No. 02-2666 in the amount of \$450.00 to cover the petition filing fee for a 37 C.F.R. 1.17(a)(2) large entity. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail with sufficient postage in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia 22313-1450 on August 18, 2005.


Jean Svoboda